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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,050

04/13/2007

Julian Carter

29610/CDT496

3599

4743

7590

01/31/2011

MARSHALL, GERSTEIN & BORUN LLP  
233 SOUTH WACKER DRIVE  
6300 WILLIS TOWER  
CHICAGO, IL 60606-6357

EXAMINER

LIN, JAMES

ART UNIT

PAPER NUMBER

1715

NOTIFICATION DATE

DELIVERY MODE

01/31/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mgbdoCKET@marshallip.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,050	<b>Applicant(s)</b> CARTER ET AL.	
	<b>Examiner</b> JAMES LIN	<b>Art Unit</b> 1715	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,8-19,33-39 and 42-45 is/are pending in the application.
- 4a) Of the above claim(s) 12-19,33-39,42 and 43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8-11,44 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/14/10</u> .   | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-11, 20-32, 40 and 41 in the reply filed on 6/21/2010 is acknowledged.
2. Claims 12-19, 33-39 and 42-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/20/2010.
3. Claim 14 has been incorrectly labeled as "Previously presented". The claim is withdrawn from consideration because it is directed to a non-elected invention. Thus, the claim should be labeled "Withdrawn". For the purpose of advancing prosecution, the elected claims will be examined on the merits.

### Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 45 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation of "wherein said bank face angle is at least 90 degrees" fails to comply with the written description requirement. Claim 1 defines the bank face angle as "a said bank has a face, defining an edge of said well, at an angle to a base of the well" (emphasis added). The specification teaches that "a bank face angle is at least 40° or 50° and may be up to 90° or, in some embodiments, greater than 90°" and that "[a]ngles greater than 90° correspond to a bank face which is undercut, over hanging the base of the well" (see [0027] of the published application). The bank face angle in the specification is defined with respect to the base of the

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bank, while the claimed angle is defined with respect to the base of the well. Based on the claim definition, the specification would seem to fully support angles less than 90°.

### **Claim Rejections - 35 USC § 102/103**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-4, 6, 8-11, 44 and 45 are rejected under 35 U.S.C. 102(e)/103(a) as being unpatentable over Gupta et al. (U.S. Publication No. 2005/0052120), alternatively, in view of Kiguchi et al. (U.S. Patent No. 6,630,274).

Gupta discloses a method of making an EL device (abstract). A plurality of banks 1010 defining wells can be formed on a substrate (Fig. 10). The height of the walls can be as low as

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0.5  $\mu\text{m}$  [0066]. An organic hole transport layer 830 and an organic EL layer 834 can be deposited into the wells by an inkjet method, wherein the respective organic materials are dissolved in a solvent ([0038],[0044]-[0059]; Fig. 8).

Alternatively, Gupta does not explicitly teach that the height of the bank is less than 2  $\mu\text{m}$ . Gupta does teach a thickness of less than 10  $\mu\text{m}$ , preferably less than 3  $\mu\text{m}$  and as low as 0.5  $\mu\text{m}$  [0066]. It would have been obvious to one of ordinary skill in the art at the time of invention to have used any thickness within the range of Gupta, including values within the claimed range, with a reasonable expectation of success. Overlapping ranges are prima facie evidence of obviousness (see MPEP 2144.05.I.).

Gupta does not explicitly teach wherein a bank has a face, defining an edge of the well, at an angle to a base of the well of greater than a contact angle of the composition with the bank face. However, the present specification seems teach that such a phenomenon occurs when the banks are formed with overhangs (see [0043] of the published application U.S. Publication No. 2008/0095981). Gupta teaches the use of banks having overhangs (Fig. 10). The method and structure of Gupta seems to be similar to that of the present invention. Similar methods must necessarily yield similar results. Therefore, the angle of the bank face of Gupta must necessarily be greater than the contact angle than the contact angle of the EL composition with the bank face.

Alternatively, Gupta teaches that the slope of the bank can have an angle equal to or less than 90°. Gupta is completely silent as to the contact angle of the EL composition to the bank face. Accordingly, Kiguchi teaches that if the contact angle between a bank and an ink is less than 30°, the ink rises, the quantity of ink adhering to the banks becomes large, and it will become easy for coloring flaws to occur on the substrate. If the contact angle exceeds 60°, the ink repellency of the bank relative to the ink becomes large and it will become easy for coloring flaws to develop on the substrate near the banks (col. 4, lines 25-39). Gupta also teaches the need to adjust the contact angle to a desired amount [0062]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a bank angle of Gupta and contact angle of the ink jet solution within the ranges as taught by Gupta and Kiguchi, including combinations within the claimed range, with a reasonable expectation of success. One

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would have been motivated to do so in order to have prevented any flaws within the EL layers. Overlapping ranges are prima facie evidence of obviousness (see MPEP 2144.05.I.).

Claims 2,44: Gupta teaches that the height of the walls can be as low as 0.5  $\mu\text{m}$  [0066].

Alternatively, Gupta does not explicitly teach that the height of the bank is less than 1  $\mu\text{m}$  or 1.5  $\mu\text{m}$ . Gupta does teach a thickness of less than 10  $\mu\text{m}$ , preferably less than 3  $\mu\text{m}$  and as low as 0.5  $\mu\text{m}$  [0066]. It would have been obvious to one of ordinary skill in the art at the time of invention to have used any thickness within the range of Gupta, including values within the claimed range, with a reasonable expectation of success. Overlapping ranges are prima facie evidence of obviousness (see MPEP 2144.05.I.).

Claim 3: Gupta recognizes the tendency of ink drops to spread and the need to control the number of droplets to be deposited in the well [0065].

Claim 4: Gupta teaches that the droplets touch the bank face ([0065]; Fig. 5).

Claim 6: Gupta teaches that the banks can be formed using lithography techniques and photoresist materials [0043].

Claim 8: Gupta teaches that the photoresist can be a negative type [0043] and can comprise a single layer (Figs. 5, 7, 8 and 10).

Claims 9,45: Gupta does not explicitly teach that the bank face angle is at least 40° or at least 90°. Gupta does teach a bank face angle of 90° or less [0030]. It would have been obvious to one of ordinary skill in the art at the time of invention to have used any angle within the range of Gupta, including values within the claimed range, with a reasonable expectation of success. Overlapping ranges are prima facie evidence of obviousness (see MPEP 2144.05.I.).

Claim 10: Gupta teaches that the bank face has an undercut (Figs. 5, 7, 8 and 10).

Claim 11: Gupta teaches that the well can be incompletely filled ([0065]; Fig. 5).

### **Response to Arguments**

10. Applicant's arguments with respect to claims 1-11, 20-32, 40 and 41 have been considered but are moot in view of the new ground(s) of rejection.

### Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LIN whose telephone number is (571)272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James Lin/

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